Ajay Sunandan

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EDUCATION

Carnegie Mellon University   Pittsburgh, USA
Master of Science in Information Security | GPA: 3.73/4.0   Dec 2025
Relevant Coursework: Network Security, Cloud Security, Introduction to Information Security, Cyber Risk Modeling, Applied Information Assurance, Introduction to Computer Systems, Distributed Systems

Amrita University   Coimbatore, India
Bachelor of Technology in Computer Engineering | GPA: 9.05/10.0 | First Class with Distinction   Jun 2021

EXPERIENCE

Cisco Systems   **Bengaluru, India**
Network Consulting Engineer   Aug 2021 – Jul 2024
- Successfully migrated **20+ critical sites** and deployed **50+ new network devices**, executing **30+ maintenance windows** with **100% success rate** and **zero service interruptions**, resulting in **45% improvement** in network performance and reliability.
- Identified and resolved issues with routing protocols (OSPF, BGP, IS-IS, and MPLS-VPN) throughout migration process.
- Implemented a configuration conversion tool for multi-vendor router migration using Jinja and TTP template engines, streamlining the process with a **70% decrease in errors** and **25% increase in project efficiency.**
- Developed an application for efficient employee's skills data collection and visualization, achieving a **70% utilization rate** among managers through effective engagement and training initiatives.
- Engineered network automation solution with Python and TextFSM, reducing service discovery time by **75% (from 15 hours to 20 minutes)** and **improving operational visibility by 80%.**
- Conducted comprehensive software risk analysis for ISP infrastructure, identifying **60+** potential vulnerabilities and recommending mitigation strategies to improve overall security posture.

Network Engineering Intern   Jan 2021 – Jul 2021
- Collaborated on rigorous testing of internal automation tools with comprehensive documentation for a new migration project, while simultaneously implementing an MPLS-VPN simulation environment that successfully **configured 5+ complex routing scenarios** for potential client use cases.

PROJECTS

Information Security CTFs   **Aug 2024 - Present**
- **Web Application Attacks**: Advanced SQL Injections, XSS, CSRF, CORS & SOP, Authentication (MFA, OAuth, JWT), Server-side attacks, HTTP Request smuggling.
- **Binary exploitation**: Stack canary, ASLR, ret2libc, NOP sleds and ROP gadgets (buffer overflow).
- **Cryptography**: ECB, SHA-256 Hash Extension, Padding Oracle, and PGP.
- **Reverse Engineering**: Static analysis (IDA Pro, Ghidra), Dynamic debugging (GDB, WinDbg), Decompilation techniques, and Assembly language interpretation (x86-x64).
- **Forensics**: Autopsy, Volatility, disk image examination, memory dumps, file carving, timeline analysis, artifact recovery, malware detection, and incident reconstruction techniques.

Network Protocol Attacks & Analysis | *Raw Sockets Programming*   **Feb 2025**
- Implemented network attack simulations including ICMP flooding, Smurf attacks, and TCP SYN flooding using raw socket programming, developed a packet sniffer tool to analyze network packet behaviors and demonstrated mitigation techniques such as SYN cookies within an isolated emulation environment.

AWS Cloud Security and Monitoring Implementation | *S3, VPCs, EC2*   **Nov 2024 - Dec 2024**
- Designed and implemented a comprehensive AWS security infrastructure utilizing KMS, IAM policies, encryption, security groups, NACLs, and Network Firewall, while configuring CloudTrail, CloudWatch, and AWS Config for automated monitoring, and incident response, resulting in enhanced data protection, operational security, and cost efficiency.

BGP & HTTPS Hijacking Attack | *FRRouting, iptables, Bind9, RPKI*   **Sep 2024**
- Conducted BGP and HTTPS hijacking attacks to analyze routing vulnerabilities and employed RPKI-based security measures to test mitigations against network hijacking and HTTPS spoofing threats.

SKILLS

Languages: Python, C++, C, Golang, Bash/Shell, Assembly, Embedded C.

Computing Environments: Windows, Linux, GCP, AWS.

Frameworks, Tools, & Technologies: Nmap, Metasploit, Wireshark, Burpsuite, Suricata IDS, SIEM, Ansible, Git, Docker, Kubernetes, IAM, IDS/IPS, Firewalls, WAF, TCP/IP, IaC(Terraform), GDB, Ghidra, WinDBG, IDA Pro, OWASP Top 10, MITRE ATT&CK Framework, NIST CSF, STRIDE, FAIR, PASTA, Socket programming.

Certifications: AWS Solutions Architect (SAA-C03), Cisco Certified Network Associate (CCNA), Cisco Certified DevNet Associate.